



MARK A. YOUNG
EXECUTIVE DIRECTOR

LOWELL REGIONAL WASTEWATER UTILITY

WASTEWATER COLLECTION AND TREATMENT



SERVING LOWELL
CHELMSFORD
DRACUT
TEWKSBURY
TYNGSBORO

November 15, 2019

RE: MA0100633

To Whom It May Concern:

The following is an itemization of status and improvement for the Lowell Regional Wastewater Utility during October 2019. Enclosed is a copy of the Discharge Monitoring Report for this period.

The Discharge Monitoring Report is also now being submitted electronically to the Environmental Protection Agency through the NetDMR website and also via email to the Massachusetts Department of Environmental Protection.

PERMIT EXCEEDANCES:

There were no permit exceedances for the month of October 2019.

WET WEATHER CSO DIVERSIONS/SECONDARY TREATMENT BYPASS:

- Included on pages 9 and 10 of the Plant Operating Data attachment.

FECAL COLIFORM:

- Results of additional Fecal Coliform samples required during bypassing of secondary treatment, when applicable, are included on page 8 of the Plant Operating Data attachment.

PROCESS CHANGES AND IMPROVEMENTS:

- Anoxic periods in the last cell of the aeration system have been disabled due to the fact that it is no longer needed for NO₃ control.
- The Primary and Secondary Clarifiers are undergoing a complete upgrade as part of the phase 2B construction project. This has limited flow through the primary clarifiers and impacted wet weather flow capacity.
 - Secondary Clarifier No.3 has been rebuilt and returned to service on 10/11.
 - Secondary Clarifier No.4 was taken offline on 10/25 for a complete upgrade. This has temporarily limited flow through aeration.
 - Primary Clarifiers No.1 has been rebuilt and was returned to service on 10/13.

- Primary Clarifiers No.2 has been rebuilt and was returned to service on 10/30.
- All aeration blowers have been replaced and are online.
- Thickened Waste Pump No. 744 was replaced with a temporary progressive cavity pump on 6/14. This is being done as part of a new sludge pump technology trial.
- As part of the Phase 2B construction project, the aeration trains are undergoing modifications to Cell 1 to optimize the biological process for phosphorus control.
 - Aeration Train No. 2 was upgraded and returned to service on 9/16.
 - Aeration Train No. 2 was upgraded and returned to service on 10/31.
- Beginning on 9/10, hauled waste deliveries into the facility were limited to control poor settling conditions in the Primary Clarifiers. Limited hauled waste deliveries continued throughout October.
- As part of the Phase 2B Construction upgrade the Utility is upgrading the Duck Island SCADA system. This upgrade will enhance the control, automation, and data collection capabilities of the SCADA system.
 - The Utility has been in the process of transitioning to the new system, which went live on 9/27.

MAJOR EQUIPMENT MAINTENANCE:

- 10/5 – Primary No.5 was repaired and returned to service
- 10/9 – Bar Rack No.1 was repaired and returned to service
- 10/11 – Bar Rack No.2 was repaired and returned to service
- 10/13 ~ 10/17 – Secondary Tank No.2 was undergoing repairs and returned to service
- 10/18 ~ 10/24 – Secondary Tank No.1 was undergoing repairs and returned to service

COMMERCIAL POWER OUTAGES:

- There were no power outages reported during this period.

ODOR COMPLAINTS:

- There were no reported odor complaints during this period.

MAJOR EQUIPMENT IN SERVICE FOR THIS PERIOD:

Screw Pumps:	Nos. 1, 2, 3, and 4	Chlorine Contact Tanks:	Nos. 1 and 2
Primary Clarifiers:	Nos. 1, 2, 3, 4, 5, and 6	Gravity Thickeners:	Nos. 1 and 2
Biological Selectors:	Nos. 1, 2, 3, and 4	Belt Filter Presses:	No. 1
Secondary Clarifiers:	Nos. 1, 2, and 4	Aeration Blowers:	Nos. 1, 2, 3 and 4
Rotary Drum Thickeners:	BDP	Temporary Centrifuge:	Online

PLANT EFFICIENCIES:

	Influent	Effluent	Average Removal
CBOD (5-Day):	225.6 mg/l	11.0 mg/l	93.4%
Suspended Solids:	197.5 mg/l	14.9 mg/l	94.7%

Respectfully,

A handwritten signature in black ink, appearing to read 'Aaron Fox', with a long horizontal stroke and a small upward flick at the end.

Aaron Fox, Operations Manager
Lowell Regional Wastewater Utility
First St. Blvd. (Rt. 110)
Lowell MA 01850

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

Form Approved.

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

DISCHARGE MONITORING REPORT (DMR)

OMB No. 2040-0004

NAME: LOWELL REGIONAL WW UTILITY
ADDRESS: 451 FIRST ST BLVD
 LOWELL, MA 01850
FACILITY: LOWELL REGIONAL WW UTILITY
LOCATION: 451 FIRST ST BLVD
 LOWELL, MA 01850
ATTN: AARON FOX, OPER. SUPT

MA0100633
 PERMIT NUMBER

035-A
 DISCHARGE NUMBER

DMR MAILING ZIP CODE: 01850

MAJOR \$

(SUBR E)

TREATED EFFLUENT

External Outfall

FROM

TO

NO DISCHARGE

☐

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Oxygen, dissolved (DO)	SAMPLE MEASUREMENT	*****	*****	*****	7.8	*****	*****	mg/L	0	01/01	GR
00300 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	Req. Mon. MO AVG	*****	*****	mg/L		Daily	GRAB
pH	SAMPLE MEASUREMENT	*****	*****	*****	6.7	*****	7.2	SU	0	01/01	GR
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	6.0 MINIMUM	*****	8.3 MAXIMUM	SU		Daily	GRAB
Solids, total suspended	SAMPLE MEASUREMENT	3,238	*****	lb/d	14.9	18.56	36.8	mg/L	0	05/07	24
00530 1 0 Effluent Gross	PERMIT REQUIREMENT	8,006 MO AVG	*****	lb/d	30 MO AVG	45 WKLY AVG	50 DAILY MX	mg/L		Weekdays	COMP24
Solids, total suspended	SAMPLE MEASUREMENT	42,045	*****	lb/d	197.5	*****	*****	mg/L	0	05/07	24
00530 G 0 Raw Sewage Influent	PERMIT REQUIREMENT	Req. Mon. MO AVG	*****	lb/d	Req. Mon. MO AVG	*****	*****	mg/L		Weekdays	COMP24
Phosphorus, total (as P)	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	2.6	mg/L	0	01/30	24
00665 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	Req. Mon. DAILY MX	mg/L		Monthly	COMP24
Flow, in conduit or thru treatment plant	SAMPLE MEASUREMENT	30.53	45.58	MGD	*****	*****	*****	*****	0	99/99	RC
50050 1 0 Effluent Gross	PERMIT REQUIREMENT	32 12MO AVG	Req. Mon. DAILY MX	MGD	*****	*****	*****	*****		Continuous	RCORDR
Chlorine, total residual	SAMPLE MEASUREMENT	*****	*****	*****	0.005	*****	0.48	mg/L	0	99/99	RC
50060 0 0 Intake	PERMIT REQUIREMENT	*****	*****	*****	Req. Mon. MO AVG	*****	Req. Mon. DAILY MX	mg/L		Continuous	RCORDR

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	TELEPHONE		DATE	
AARON FOX OPERATIONS SUPERINTENDENT		978 674-4248		11/15/2019	
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT		AREA CODE	NUMBER

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

REPORT MAXIMUM AND MINIMUM DAILY RATES AND TOTAL FLOW FOR EACH OPERATING DATE WITH DMR. QUARTERLY DATA ON DMR 035Q, WET DATA ON 035B. PERMIT DATA 9-1-05

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

Form Approved.

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

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OMB No. 2040-0004

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 LOWELL, MA 01850
FACILITY: LOWELL REGIONAL WW UTILITY
LOCATION: 451 FIRST ST BLVD
 LOWELL, MA 01850
ATTN: AARON FOX, OPER. SUPT

MA0100633
PERMIT NUMBER

035-A
DISCHARGE NUMBER

DMR MAILING ZIP CODE: 01850

MAJOR \$

(SUBR E)

TREATED EFFLUENT

External Outfall


FROM

MONITORING PERIOD			
MM/DD/YYYY		MM/DD/YYYY	
10/01/2019		10/31/2019	

TO

NO DISCHARGE

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Chlorine, total residual	SAMPLE MEASUREMENT	*****	*****	*****	0.03	*****	0.18	mg/L	0	01/01	GR
50060 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	0.21 MO AVG	*****	0.37 DAILY MX	mg/L		Daily	GRAB
Coliform, fecal general	SAMPLE MEASUREMENT	*****	*****	*****	5	*****	255	#/ 100mL	0	05/07	GR
74055 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	MO GEO	*****	DAILY MX	#/ 100mL		Weekdays	GRAB
BOD, carbonaceous, 05 day, 20C	SAMPLE MEASUREMENT	2,423	*****	lb/d	11.0	11.16	39.0	mg/L	0	05/07	24
80082 1 0 Effluent Gross	PERMIT REQUIREMENT	6,672 MO AVG	*****	lb/d	25 MO AVG	40 WKLY AVG	50 DAILY MX	mg/L		Weekdays	COMP24
BOD, carbonaceous, 05 day, 20C	SAMPLE MEASUREMENT	47,890	*****	lb/d	225.6	*****	*****	mg/L	0	05/07	24
80082 G 0 Raw Sewage Influent	PERMIT REQUIREMENT	Req. Mon. MO AVG	*****	lb/d	Req. Mon. MO AVG	*****	*****	mg/L		Weekdays	COMP24

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AARON FOX OPERATIONS SUPERINTENDENT			978 674-4248		11/15/2019	
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE	NUMBER	MM/DD/YYYY	

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

REPORT MAXIMUM AND MINIMUM DAILY RATES AND TOTAL FLOW FOR EACH OPERATING DATE WITH DMR. QUARTERLY DATA ON DMR 035Q, WET DATA ON 035B. PERMIT DATA 9-1-05

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

DISCHARGE MONITORING REPORT (DMR)

OMB No. 2040-0004

NAME: LOWELL REGIONAL WW UTILITY
ADDRESS: 451 FIRST ST BLVD
 LOWELL, MA 01850
FACILITY: LOWELL REGIONAL WW UTILITY
LOCATION: 451 FIRST ST BLVD
 LOWELL, MA 01850
ATTN: AARON FOX, OPER. SUPT

MA0100633	035-B
PERMIT NUMBER	DISCHARGE NUMBER

DMR MAILING ZIP CODE: 01850

MAJOR \$

(SUBR E)

WET DATA 4/YEAR

External Outfall

MONITORING PERIOD			
MM/DD/YYYY	FROM	TO	MM/DD/YYYY
10/01/2019			10/31/2019

NO DISCHARGE

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
LC50 Static 48Hr Acute Ceriodaphnia	SAMPLE MEASUREMENT	*****	*****	*****	>100.0	*****	*****	%	0	04/YR	24
TAA3B 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	100 DAILY MN	*****	*****	%		Four Per Year	COMP24
Noel Static 7Day Chronic Ceriodaphnia	SAMPLE MEASUREMENT	*****	*****	*****	6.25	*****	*****	%	0	04/YR	24
TBD3B 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	Req. Mon. DAILY MN	*****	*****	%		Four Per Year	COMP24

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AARON FOX OPERATIONS SUPERINTENDENT		978 674-4248		11/15/2019	
TYPED OR PRINTED		AREA CODE	NUMBER	MM/DD/YYYY	

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

WHOLE EFFLUENT TOXICITY TEST IN JANUARY, APRIL, JULY, OCTOBER; SUBMIT DMR AND REPORT BY END OF FOLLOWING MONTH.

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

DISCHARGE MONITORING REPORT (DMR)

OMB No. 2040-0004

NAME:

LOWELL REGIONAL WW UTILITY

ADDRESS:

451 FIRST ST BLVD

FACILITY:

LOWELL, MA 01850

LOCATION:

LOWELL REGIONAL WW UTILITY

ATTN:

AARON FOX, OPER. SUPT

MA0100633

PERMIT NUMBER

035-Q

DISCHARGE NUMBER

DMR MAILING ZIP CODE: 01850

MAJOR \$

(SUBR E)

QUARTERLY DATA

External Outfall

MONITORING PERIOD

MM/DD/YYYY

08/01/2019


TO

MM/DD/YYYY

10/31/2019

NO DISCHARGE

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Nitrogen, ammonia total (as N) 00610 1 0 Effluent Gross	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	17.00	mg/L	0	01/90	24
	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	Req. Mon. DAILY MX	mg/L		Quarterly	COMP24
Nitrite plus nitrate total 1 det. (as N) 00630 1 0 Effluent Gross	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	4.30	mg/L	0	01/90	24
	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	Req. Mon. DAILY MX	mg/L		Quarterly	COMP24
Nitrogen, Kjeldahl, total (TKN) (water) 51087 1 0 Effluent Gross	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	17.9	mg/L	0	01/90	24
	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	Req. Mon. DAILY MX	mg/L		Quarterly	COMP24

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COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
QUARTERLY DATA

Lowell Regional Wastewater Utility

NPDES Report (Permit NO. MA0100633)

Printed on Fri Nov 15 2019

November 2019

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Plant Influent Data									
Date	Plant Influent Flow			CBOD		TSS		VSS	TVS
	Total (MG)	Max Hourly (MGD)	Min Hourly (MGD)	(mg/L)	(lbs)	(mg/L)	(lbs)	(mg/L)	(%)
01-Fri	27.01	32.20	20.87						
02-Sat	26.48	32.30	19.98						
03-Sun	26.17	31.95	18.10	118.0	25,754.4	152.00	33,175.2	146.0	96.1
04-Mon	21.14	28.55	18.45	174.0	30,677.5	148.00	26,093.5	141.0	95.3
05-Tue	23.75	39.07	17.03	360.0	71,307.0	160.00	31,692.0	151.0	94.4
06-Wed	23.38	28.05	17.24	325.0	63,371.5	158.00	30,808.3	149.0	94.3
07-Thu	31.73	67.59	0.16	300.0	79,388.5	167.00	44,192.9	156.0	93.4
08-Fri	24.29	28.83	17.86						
09-Sat	23.68	30.13	16.52						
10-Sun	23.45	29.97	16.87						
11-Mon	23.22	28.10	16.13			174.00	33,695.9	166.0	95.4
12-Tue	22.99	27.25	16.30			178.00	34,129.1	170.0	95.5
13-Wed	22.77	27.46	15.93			151.00	28,675.2	141.0	93.4
14-Thu	21.34	26.93	15.55						
15-Fri		26.11	15.66						
16-Sat									
17-Sun									
18-Mon									
19-Tue									
20-Wed									
21-Thu									
22-Fri									
23-Sat									
24-Sun									
25-Mon									
26-Tue									
27-Wed									
28-Thu									
29-Fri									
30-Sat									
Min	21.14	26.11	0.16	118.0	25,754	148.0	26,094	141.0	93.4
Max	31.73	67.59	20.87	360.0	79,388	178.0	44,193	170.0	96.1
Avg	24.39	32.30	16.18	255.4	54,100	161.0	32,808	152.5	94.7
Total	341.40				270,499		262,462		

Lowell Regional Wastewater Utility

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Date	Primary Influent Data												
	Primary Influent Flow			CBOD		TSS		VSS	TVS	Settleable Solids	Grit & Screenings	Ambient Temperature (F)	
	Total (MG)	Max. Hourly (MGD)	Min. Hourly (MGD)	(mg/L)	(lbs)	(mg/L)	(lbs)	(mg/L)	(%)	(ml/L)	(cu ft)	Min.	Max.
01-Fri	27.01	32.20	20.87									32	56
02-Sat	26.48	32.30	19.98									32	53
03-Sun	26.17	31.95	18.10			198.0	43,215	188.0	94.9	10.0		33	54
04-Mon	21.14	28.55	18.45			226.0		214.0	94.7	13.5		34	54
05-Tue	23.75	39.07	17.03			230.0		214.0	93.0	13.0		40	57
06-Wed	23.38	28.05	17.24	210.0	40,948	274.0		252.0	92.0	14.0		33	53
07-Thu	31.73	67.59	0.16	480.0	127,022	298.0		204.0	68.5	29.0		29	54
08-Fri	24.29	28.83	17.86									23	35
09-Sat	23.68	30.13	16.52									23	39
10-Sun	23.45	29.97	16.87									33	51
11-Mon	23.22	28.10	16.13			402.0		360.0	89.6	16.0		33	49
12-Tue	22.99	27.25	16.30			218.0		208.0	95.4	12.5		17	38
13-Wed	22.77	27.46	15.93			234.0	44,437	218.0	93.2	13.5		17	30
14-Thu	21.34	26.93	15.55									19	39
15-Fri		26.11	15.66										
16-Sat													
17-Sun													
18-Mon													
19-Tue													
20-Wed													
21-Thu													
22-Fri													
23-Sat													
24-Sun													
25-Mon													
26-Tue													
27-Wed													
28-Thu													
29-Fri													
30-Sat													
Min	21.14	26.11	0.16	210.0	40,948	198.0	43,215	188.0	68.5	10.0		17	30
Max	31.73	67.59	20.87	480.0	127,022	402.0	44,437	360.0	95.4	29.0		40	57
Avg	24.39	32.30	16.18	345.0	83,985	260.0	43,826	232.3	90.2	15.2		28	47
Total	341.40				167,969		87,652						

Lowell Regional Wastewater Utility

NPDES Report (Permit NO. MA0100633)

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November 2019

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Date	Primary Effluent Data													
	Primary Effluent Flow	CBOD			TSS			VSS	TVS	Settleable Solids	PS&G Avg Rate	PS&G Total Flow	Ammonia NH3	Nitrate NO3
	Total (MG)	(mg/L)	(lbs)	(% Removal)	(mg/L)	(lbs)	(% Removal)	(mg/L)	(%)	(ml/L)	(GPM)	(MG)	(mg/L)	(mg/L)
01-Fri											1,083	1.56		
02-Sat											1,040	1.51		
03-Sun					64.0	13,968	57.9	63.0	98.4	0.30	1,020	1.39		
04-Mon					68.0			66.0	97.1	0.30	1,049	1.53		
05-Tue					69.0			66.0	95.7	0.20	1,011	1.48	25.7	0.35
06-Wed		130.0			72.0			68.0	94.4	0.10	1,055	1.47		
07-Thu		114.0			72.0			68.0	94.4	0.30	908	1.34		
08-Fri												1.53		
09-Sat											1,106	1.60		
10-Sun											1,074	1.57		
11-Mon					69.0			66.0	95.7	0.20	1,047	1.51		
12-Tue					66.0			64.0	97.0	0.50	1,027	1.49	23.4	0.23
13-Wed					65.0	12,344	57.0	60.0	92.3	0.50	1,003	1.45		
14-Thu											999	1.44		
15-Fri														
16-Sat														
17-Sun														
18-Mon														
19-Tue														
20-Wed														
21-Thu														
22-Fri														
23-Sat														
24-Sun														
25-Mon														
26-Tue														
27-Wed														
28-Thu														
29-Fri														
30-Sat														
Min		114.0			64.0	12,344	57.0	60.0	92.3	0.10	908	1.34	23.4	0.23
Max		130.0			72.0	13,968	57.9	68.0	98.4	0.50	1,106	1.60	25.7	0.35
Avg		122.0			68.1	13,156	57.4	65.1	95.6	0.30	1,032	1.49	24.6	0.29
Total						26,312						20.87		

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[illegible]

Lowell Regional Wastewater Utility

NPDES Report (Permit NO. MA0100633)

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November 2019

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	Secondary Data							
Date	SAS					Ammonia NH3-N	Nitrogen Removal	Nitrate NO3
	RAS TSS (mg/L)	Avg TS Conc. (mg/L)	RAS Avg Flow (gpm)	WAS Avg Flow (gpm)	WAS TS (lb)	(mg/L)	(%)	(mg/L)
01-Fri			6,323	347				
02-Sat			6,195	358				
03-Sun			6,127	350				
04-Mon		8,473	5,709	347	35,277			
05-Tue			5,477	339		13.5	47.5	4.13
06-Wed			5,427	335				
07-Thu		8,253	5,633	312	30,878			
08-Fri			5,636	385				
09-Sat			5,494	389				
10-Sun			5,422	387				
11-Mon			5,370	381				
12-Tue		7,607	5,328	373	34,105	11.7	50.0	3.62
13-Wed			5,277	376				
14-Thu		8,020	5,250	370	35,600			
15-Fri								
16-Sat								
17-Sun								
18-Mon								
19-Tue								
20-Wed								
21-Thu								
22-Fri								
23-Sat								
24-Sun								
25-Mon								
26-Tue								
27-Wed								
28-Thu								
29-Fri								
30-Sat								
Min		7,607	5,250	312	30,878	11.7	47.5	3.62
Max		8,473	6,323	389	35,600	13.5	50.0	4.13
Avg		8,088	5,619	361	33,965	12.6	48.7	3.88
Total					135,859			

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Solids Handling Data														
Date	Polymer		Hauled Waste Total gal	Septage Received (gal)	TWAS		GT Average Flow (GPM)	Sludge Feed (%TS)	Total Dewatering Feed Flow (gal)	Hauled Sludge Cake				
	(gal)	(lbs)			Average Flow (GPM)	(%TS)				(wet lbs)	(wet tons)	(wet metric tons)	(dry tons)	(%TS)
01-Fri							1,101		227,044	0	0.00	0.00		
02-Sat							1,069		17,586	0	0.00	0.00		
03-Sun							1,032	4.5	110,484	0	0.00	0.00	0.00	23.9
04-Mon							1,103	4.3	159,540	0	0.00	0.00	0.00	25.2
05-Tue							1,052	4.4	229,838	0	0.00	0.00	0.00	25.4
06-Wed							1,051	4.2	242,395	0	0.00	0.00	0.00	24.7
07-Thu							954	3.9	151,401	0	0.00	0.00	0.00	25.5
08-Fri							1,078		168,970	0	0.00	0.00		
09-Sat							1,123		1,565	0	0.00	0.00		
10-Sun							1,100		118,714	0	0.00	0.00		
11-Mon							1,067		129,741	0	0.00	0.00		
12-Tue							1,046		165,965	0	0.00	0.00		
13-Wed					31.6	5.6	1,022	4.3	141,116	0	0.00	0.00	0.00	24.7
14-Thu					31.0	5.6	1,010		169,817	0	0.00	0.00		
15-Fri										0	0.00	0.00		
16-Sat														
17-Sun														
18-Mon														
19-Tue														
20-Wed														
21-Thu														
22-Fri														
23-Sat														
24-Sun														
25-Mon														
26-Tue														
27-Wed														
28-Thu														
29-Fri														
30-Sat														
Min					31.02	5.60	954	3.9	1,565	0	0.00	0.00	0.00	23.9
Max					31.57	5.60	1,123	4.5	242,395	0	0.00	0.00	0.00	25.5
Avg					31.29	5.60	1,058	4.3	145,298	0	0.00	0.00	0.00	24.9
Total									2,034,176	0	0.00	0.00	0.00	

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Date	Plant Effluent Data (1)											
	Plant Effluent Flow			Settleable Solids (ml/L)	Effluent Temp (F)	D.O. Grab (mg/L)	Cl2 Dose (lbs)	Chlorine Residual (mg/L) (Grab Samples)			Chlorine Residual Continuous Recording	
	Total (MG)	Max. Hourly (MGD)	Min. Hourly (MGD)					Shift 1	Shift 2	Shift 3	Avg. (mg/L)	Max. (mg/L)
01-Fri	26.27	30.00	20.23			8.2	1,390		0.05		0.00	0.01
02-Sat	25.34	30.17	20.11		62.6	8.5	1,390		0.01		0.00	0.00
03-Sun	24.55	29.28	16.30	0.05	62.2	8.4	1,010		0.00		0.00	0.00
04-Mon	23.43	27.24	16.30	0.05	61.9	8.4	1,200		0.01		0.00	0.01
05-Tue	23.10	36.59	15.92	0.05	62.8	8.5	1,200		0.01		0.00	0.02
06-Wed	22.76	26.73	15.63	0.05	62.2	8.3	1,264		0.00		0.01	0.74
07-Thu	30.18	66.51	0.01	0.05	62.6	8.2	1,516		0.00		0.01	0.09
08-Fri	24.02	29.10	16.87			8.4	1,011		0.12		0.00	0.03
09-Sat	22.76	28.21	14.54		59.7	8.3	1,264		0.00		0.00	0.00
10-Sun	23.05	28.41	15.74		59.5	8.2	1,137		0.02		0.00	0.00
11-Mon	23.05	27.64	15.04	0.05	59.7	8.2	1,137		0.00		0.00	0.00
12-Tue	22.46	25.90	15.00	0.05							0.00	0.01
13-Wed	20.87	24.88	13.86	0.05							0.00	0.01
14-Thu	21.14	25.54	13.13								0.00	0.01
15-Fri		24.42	14.19									
16-Sat												
17-Sun												
18-Mon												
19-Tue												
20-Wed												
21-Thu												
22-Fri												
23-Sat												
24-Sun												
25-Mon												
26-Tue												
27-Wed												
28-Thu												
29-Fri												
30-Sat												
Min	20.87	24.42	0.01	0.05	59.5	8.2	1,010		0.00		0.00	0.00
Max	30.18	66.51	20.23	0.05	62.8	8.5	1,516		0.12		0.01	0.74
Avg	23.78	30.71	14.86	0.05	61.5	8.3	1,229		0.02		0.001	0.07
Total	332.99	12 MM Avg=					13,519					

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Plant Effluent Data (2)

Date	Plant Effluent pH			Fecal Coliform (colonies/100 ml)	Fecal Coliform Bypass Event (colonies/100 ml)	CBOD			TSS			VSS	TVS	Ammonia NH3-N	Nitrogen Removal	Total Phosphorus	Phosphorus Removal
	Min.	Max.	Grab			(mg/L)	(lbs)	(% Removal)	(mg/L)	(lbs)	(% Removal)	(mg/L)	(%)	(mg/L)	(%)	(mg/L)	(%)
01-Fri	6.4	6.5	6.8	5													
02-Sat	6.5	6.7	7.0	2													
03-Sun	6.4	6.6	7.0			3.7	758	97.1	8.9	1,823	94.5	8.7	97.8				
04-Mon	6.5	6.7	6.9	2		4.2	821	97.3	7.7	1,505	94.2	7.7	100.0				
05-Tue	6.4	6.7	7.1	1		5.8	1,117	98.4	10.6	2,042	93.6	10.0	94.3				82.3
06-Wed	6.5	6.7	7.1	0		4.4	835	98.7	7.2	1,366	95.6	6.9	95.8				
07-Thu	6.3	6.8	7.1	0		22.8	5,739	92.8	22.0	5,537	87.5	20.6	93.6				
08-Fri	6.4	6.6	6.7														
09-Sat	6.4	6.6	6.9														
10-Sun	6.4	6.6	6.9														
11-Mon	6.5	6.7	7.1						8.3	1,596	95.3	8.3	100.0				
12-Tue	6.5	6.7	7.0	0					7.2	1,348	96.0	7.2	100.0				85.1
13-Wed	6.5	6.7	7.0	1					15.8	2,750	90.4	14.8	93.7				
14-Thu	6.4	6.6	7.0														
15-Fri																	
16-Sat																	
17-Sun																	
18-Mon																	
19-Tue																	
20-Wed																	
21-Thu																	
22-Fri																	
23-Sat																	
24-Sun																	
25-Mon																	
26-Tue																	
27-Wed																	
28-Thu																	
29-Fri																	
30-Sat																	
Min	6.3	6.5	6.7	0		3.7	758	92.8	7.2	1,348	87.5	6.9	93.6				82.3
Max	6.5	6.8	7.1	5		22.8	5,739	98.7	22.0	5,537	96.0	20.6	100.0				85.1
Avg				1		8.2	1,854	96.9	11.0	2,246	93.4	10.5	96.9				83.7
Total		MO GEO=			1		9,270	94.5		17,967	79.5						

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